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Article · November 2016

DOI: 10.1016/j.jctube.2016.11.004

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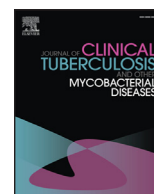
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Why has MDR-TB prevalence increased in Iran?



Dear Sir,

According to World Health Organization (WHO), the incidence rate of tuberculosis (TB) in Iran has decreased from 36/100,000 in 1990 to 17/100,000 in 2014 [1]. The main tasks performed by Ministry of Health of Iran for decreasing the incidence rate of TB, especially in the last three decades include: starting the BCG vaccination in 1984, establishment of National TB Programme (NTP) in 1996, conducting the Directly Observed Treatment, Short-Course (DOTS) strategy in 1997, performing TB control program in prisons in 2002, using the electronic system for TB reporting in 2003, establishment of seven regional TB laboratories in the country during 2010–2013 and free access to TB medication. However, one of the important challenges for TB control strategies include the increasing prevalence and rapid distribution of multidrug-resistant TB (MDR-TB) in Iran. Recently, this concern has been further intensified by reports of extensively drug resistant (XDR) – and totally drug resistant-TB (TDR-TB) [2]. According to the Iranian centre for disease control and prevention, the number of confirmed MDR-TB cases has increased from 8 in 2003 to 41 in 2015 [3]. Generally, patients infected with drug resistant strains of *Mycobacterium tuberculosis* need a long-term treatment and drugs with a higher cost; the treatment cost proportion of Iranian MDR-TB patients to drug-sensitive cases is roughly as 15,000–80,000 to 150 dollars; the course of treatment proportion, 18–24 to 6 months; and hospitalization rate proportion, 100 to 10 [3]. The increased prevalence of MDR-TB in Iran may have several reasons. Iran is an eastern Mediterranean country that located between the high MDR-TB (Pakistan, Azerbaijan and Armenia) and high-TB burden (Pakistan and Afghanistan) countries in the region. Based on the Iranian centre for disease control and prevention, high rate of drug-resistant cases was seen in border provinces of Iran i.e. Sistan-Baluchestan, Khorasan-Razavi, Golestan and East-Azerbaijan [2]. Sistan-Baluchestan and Khorasan-Razavi are densely populated and seriously affected in terms of economy and public health status. Additionally, long borders (1500 km) with Afghanistan and Pakistan, have made these provinces a natural route for TB transmission. Regional laboratories with drug susceptibility testing capability in these regions are still under quality control and do not have proper facilities for patients admission. Consequently, local and immigrant patients with MDR-TB have to come to the central laboratory for further treatment and hospitalization, which may increase the risk of MDR-TB transmission in the country. Further-

more, prescription of inadequate treatment regimen, irregular drug supply and poor drug quality have also been recently recognized as other important risk factors for emergence of MDR-TB in Iran. In addition to the above reasons, establishment of the nationwide internet-based reporting system may also have a role for the observed prevalence of MDR-TB. The ministry, set up a regulation requiring all hospitals to report and refer suspected MDR-TB cases to the national central laboratory for further investigation. As a result, the number of these cases and suspected cases reported by national laboratory has increased [3]. The development of better and more rapid diagnostic methods and continuous monitoring of drug resistance are urgent priorities for the containment of MDR-TB in Iran.

Conflict of interest

None.

Funding

None.

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Received 18 June 2016

Accepted 18 November 2016